

What is claimed is:

1. A method for detecting if an image is compressed, comprising the steps of:

5 (a) computing the absolute difference between two neighbor pixels of an image, for a predetermined number of pixels of the image, horizontally and vertically;

(b) dividing the results of said step (a) into first differences that correspond to crossing block boundaries (I) and second differences that correspond to not crossing block boundaries (II);

(c) computing histograms from samples in I and II;

(d) normalizing each histogram; and

(e) determining if the image is compressed based on a difference between the two normalized histograms.

2. The method as claimed in claim 1, wherein said step (e) further comprises the substeps of:

(e1) determining a difference value K which is equal to $K = \text{sum}(\text{absolute}((\text{histogram}(I)) - (\text{histogram}(II))))$;

20 (e2) determining that the image is compressed when K is greater than a first predetermined threshold.

3. The method as claimed in claim 1, wherein said step (e) further comprises the substeps of:

(e1) determining a difference value K which is equal to
5 $K = \text{sum}(\text{absolute}((\text{histogram(I)}) - (\text{histogram(II)})))$;

(e2) determining that the image is likely compressed when K is greater than a first predetermined threshold and less than a second predetermined threshold.

10 4. The method as claimed in claim 1, wherein said step (e) further comprises the substeps of:

(e1) determining a difference value K which is equal to
15 $K = \text{sum}(\text{absolute}((\text{histogram(I)}) - (\text{histogram(II)})))$;

(e2) determining that the image is not compressed when K is less than a first predetermined threshold.

20 5. The method as claimed in claim 2, wherein said step (e) further comprises the substep of:

(e3) determining that the image is likely compressed when K is greater than a second predetermined threshold and less than a third predetermined threshold.

25 6. The method as claimed in claim 2, wherein said step (e) further comprises the substep of:

(e3) determining that the image is not compressed when K is less than a second predetermined threshold.

7. The method as claimed in claim 3, wherein said step (e) further comprises the substep of:

(e3) determining that the image is not compressed when K is less than a third predetermined threshold.

8. The method as claimed in claim 3, wherein said step (e) further comprises the substep of:

(e4) determining that the image is not compressed when K is less than a fourth predetermined threshold.

9. The method as claimed in claim 2, wherein the first predetermined value is equal to 0.15.

10. The method as claimed in claim 3, wherein the first predetermined value is equal to 0.05 and the second predetermined value is 0.15.

11. The method as claimed in claim 4, wherein the first predetermined value is equal to 0.05.

12. A method for detecting if an image is compressed, comprising the steps of:

- (a) determining a block grid within the image;
- (b) establishing blocks from the determined grid;
- (c) computing differences between samples inside the established blocks;
- (d) computing differences between samples across the established blocks; and
- (e) determining that the image is compressed based on characteristics derived from statistics of the computed differences.

13. The method as claimed in claim 12, wherein said step (e) comprises the substeps of:

- (e1) computing histograms from samples derived from said steps (c) and (d);
- (e2) normalizing each histogram; and
- (e3) determining if the image is compressed based on a difference between the two normalized histograms.

14. The method as claimed in claim 13, wherein said step (e3) further comprises the substeps of:

- (e3i) determining a difference value K which is equal to $K = \text{sum}(\text{absolute}((\text{histogram}(I)) - (\text{histogram}(II))))$;
- (e3ii) determining that the image is compressed when K is greater than a first predetermined threshold.

15. The method as claimed in claim 13, wherein said step (e3) further comprises the substeps of:

(e3i) determining a difference value K which is equal to
5 $K = \text{sum}(\text{absolute}((\text{histogram}(I)) - (\text{histogram}(II))))$;

(e3ii) determining that the image is likely compressed when K is greater than a first predetermined threshold and less than a second predetermined threshold.

16. The method as claimed in claim 13, wherein said step (e3) further comprises the substeps of:

(e3i) determining a difference value K which is equal to
 $K = \text{sum}(\text{absolute}((\text{histogram}(I)) - (\text{histogram}(II))))$;

(e3ii) determining that the image is not compressed when K is less than a first predetermined threshold.

17. The method as claimed in claim 14, wherein said step (e3) further comprises the substep of:

(e3iii) determining that the image is likely compressed when K is
20 greater than a second predetermined threshold and less than a third predetermined threshold.

18. The method as claimed in claim 14, wherein said step (e3) further comprises the substep of:

(e3iii) determining that the image is not compressed when K is less
25 than a second predetermined threshold.

19. The method as claimed in claim 15, wherein said step (e3) further comprises the substep of:

(e3iii) determining that the image is not compressed when K is less than a third predetermined threshold.

20. The method as claimed in claim 17, wherein said step (e3) further comprises the substep of:

(e3iv) determining that the image is not compressed when K is less than a fourth predetermined threshold.

21. The method as claimed in claim 13, wherein the first predetermined value is equal to 0.15.

22. The method as claimed in claim 14, wherein the first predetermined value is equal to 0.05 and the second predetermined value is 0.15.

23. The method as claimed in claim 15, wherein the first predetermined value is equal to 0.05.

24. A method for detecting if an image is compressed, comprising the steps of:

(a) computing the absolute difference between two neighbor pixels of an image, for a predetermined number of pixels of the image, horizontally and vertically;

(b) dividing the results of said step (a) into first differences that correspond to crossing block boundaries (I) and second differences that correspond to not crossing block boundaries (II);

(c) determining if the image is compressed based on a difference between statistics of the first and second difference sequences.

25. A method to detect if an image is compressed comprising the steps of:

(a) detecting blocking artifacts in the image indicative of compression; and

(b) providing an output indicative of compression upon detection of the blocking artifacts.

26. The method as claimed in claim 1, wherein the predetermined number of pixels is all of the pixels of the image.

27. The method as claimed in claim 24, wherein the predetermined number of pixels is all of the pixels of the image.

28. The method as claimed in claim 1, wherein the predetermined number of pixels is a subsample of the pixels of the image.

29. The method as claimed in claim 24, wherein the predetermined
5 number of pixels is a subsample of the pixels of the image.

10037905 110901